How effective is the ACT *Road Ready* Pre-Licencing Driver Education Program at Changing Novice Driver Risk Related Attitudes and Reducing the Offence and Crash Involvement of Novice Drivers in the ACT?

Prepared by Alexia Lennon, Lyndel Bates, Amanda Evenhuis and Klaire Somoray

2016

The Centre for Accident Research & Road Safety – Queensland is a joint venture initiative of the Motor Accident Insurance Commission and Queensland University of Technology

Table of Contents

Acknowledgements

The research project was made possible due to the funding grant provided by the NRMA-ACT Road Safety Trust. The research team would also like to thank the Freebott staff, particularly Steve Lake and Lisa Vearncombe, for their assistance with access to parents and pre-licence drivers in the Australian Capital Territory (ACT). Crash and offence records were included with the kind assistance of Access Canberra and the ACT Directorate of Justice and Community Safety. The work has been prepared exclusively by the research team and the opinions expressed are those of the authors.

Executive Summary

This report documents research funded by the NRMA ACT Road Safety Trust Fund in 2015 to evaluate the effectiveness of the ACT *Road Ready* pre-licensing driver education program at changing novice driver risk related attitudes and reducing the offence and crash involvement of novice drivers in the ACT.

Rationale for the study

Evidence from most motorised countries consistently demonstrates the increased crash risk of novice drivers in comparison to more experienced drivers. Driver education and graduated driver licensing are both intended as measures to increase the safety of young drivers by addressing one or more of the factors identified above. Research has demonstrated that graduated driver licensing systems (GDL) reduce the crash risk for novices. The evidence is less clear and consistent in relation to driver education programs, and while many are offered, evaluation, particularly outcome evaluation is less common.

The *Road Ready* program was a national first and is a pre-licensing driver education program in the ACT. Completion of *Road Ready* is a requirement for obtaining a Learner's Licence in the ACT (regardless of age) in an attempt to address attitudinal and belief related factors known to increase risk during the provisional licence period. To date, there have been no outcome evaluations undertaken of the *Road Ready* program, primarily due to the implementation of other important countermeasures at the same time as the original program (e.g. speed cameras) (OECD & ECMT, 2006).

The current project was planned as an outcome evaluation of the *Road Ready* program. Participants were young pre-licence drivers in the ACT (n = 127 at time of writing, aged under 21 years) who were about to complete the *Road Ready* program through a *Road Ready* Centre. Outcome measures were attitudinal and behavioural change measured by self-report survey, and official offence and crash records. Measures were collected at baseline (prior to completion of the *Road Ready* program) and followed up on three subsequent occasions (1 month post *Road Ready* program; 3-6 months after obtaining provisional licence; 9-12 months after obtaining P licence). After the final follow-up, participant crash and offence records were accessed and matched with survey responses.

Aims were to:

1. Estimate the length of time ACT drivers hold a Learner Licence prior to obtaining a Provisional Licences
2. Describe the number of hours and type of driving practice ACT Learner permit holders obtain prior to unsupervised driving on Provisional Licences
3. Evaluate the effectiveness of the *Road Ready* program in:
    a. Reducing novice driver offence and crash involvement for the first 6 to 12 months post provisional licencing (self-reported and official records)
    b. Encouraging attitudinal change at 6 months and 9 months post provisional licencing
    c. Encouraging compliance with provisional licencing restrictions of the ACT
    d. Preventing risky driver behaviours (i.e. speeding, alcohol consumption prior to driving).

Key findings:

- Learners in the ACT spend 6 months or more on their learner licences before applying for provisional licences, though small numbers in the Time 4 sample mean that this finding should be treated with caution until additional follow up data is available.
- Learners obtain at least 50 hours of supervised practice driving while on their learner licences
- The *Road Ready* program does not appear to affect levels of sensation seeking in learner drivers
- Levels of learners self-assessed driving skill increased and levels of susceptibility to negative outcomes from driving (Illusory Invulnerability) remained unchanged over the period before the Road Ready

program to the point where learners had completed an average of 10 hours of supervised driving practice. This suggests learners become more confident (and potentially overconfident) about their driving skill but do not change their views of their risks.

- Compared to learners in NSW and Queensland, ACT learners were significantly less confident about their driving skills but had significantly lower perceptions of the risks of driving
- Overall, learners in the ACT indicated that once driving on their provisional licences they intended to obey the road rules generally, observe the speed limit and not drive after drinking (even if they might not be over the limit). They also intended to reduce their exposure to night driving, a riskier driving condition. However, they also indicated that they intended to drive with peer aged passengers at night, albeit less strongly than intentions in relation to other driving behaviours, which is also a riskier condition.

Taken together, the results present a mixed picture of the potential effects of the Road Ready program. Strong positive intentions once on their P plates to obey the road rules, speed limits and to voluntarily adopt reduced exposure to some riskier driving conditions and to intend to comply with generally observing the road rules even if they know they won't get caught were reported. However, while exposure to the *Road Ready* program appears to be associated with promising intentions, there was no apparent increase in ACT learners' perceptions of the risks of driving, and these were significantly lower than those of NSW or Queensland learners. This suggests that while exposure to the *Road Ready* program may be increasing learner awareness of factors associated with young driver crash risk, this may not be fully applied to the risks to self, leading to the conclusion that key messages of the program are not being absorbed.

Recommendations are that:

the evaluation be completed at a later time when a larger and more complete sample of objective outcomes measures will be available for examination

Road Ready continue to be offered in the ACT as it appears to have some positive influence

The educational benefit from the Road Ready program be supported and augmented by implementation of a more extensive graduated driver licencing system in the ACT. This should ideally include mandating of minimum hours of supervised driving practice on the learner phase and restrictions on peer passenger carriage during the provisional phase

1 Introduction

1.1 Background

Evidence from most motorised countries demonstrates the increased crash risk of novice drivers (newly licenced drivers) in comparison to more experienced drivers (Lewis-Evans, 2010; Mayhew, Simpson & Pak, 2003), especially within the first 6 months of obtaining a licence (Bates, Davey, Watson, King, & Armstrong, 2014). In Australia, novice drivers are typically aged 17-24 years and make up around 13% of the population but are involved in about 25% of fatal road crashes. Possible reasons for this increased crash risk and vulnerability are a combination of inexperience, age and developmental factors. In addition, various intentional risk taking behaviours and lifestyle factors that are typically associated with the adolescent years interact with these factors to influence both behaviour and driving circumstances. Further, novice driver crash risk is also affected by the characteristics associated with the times of day when they are most likely to be driving, and the influence of peer passengers (Shope, Raghunathan, & Patil, 2003).

In recognition of their greater crash risk and vulnerability, intervention with young drivers to address these issues has been an important priority in Australia. Three of the main interventions are driver training, driver education and graduated driver licensing (GDL). Each has the intention of reducing risk and thereby reducing young driver involvement in crashes. Driver education and GDL are both intended as measures to increase the safety of young drivers by addressing one or more of the factors identified above. GDL systems, consist of a learner, provisional and open licence and are designed to address this elevated crash risk by limiting the novice driver's exposure to high risk situations while still allowing them to gain driving experience (Bates et al., 2014; McCartt, Teoh, Fields, Braitman, & Hellinga, 2010; Williams & Shults, 2010). Research has demonstrated that GDL systems reduce the crash risk for novice drivers (Bates et al., 2014).

Driver training and education programs are generally targeted at one of the three stages of licensing: pre-learner, learner drivers (Lonero, 2008; Watson et al., 1996) or post licensure (usually referred to as advanced driver training). Australian reviews of the driver education literature (Senserrick & Haworth, 2005) have made recommendations that driver education programs should: address novice driver understanding of the impact of emotions and attitudes on their driving choices as well as raising awareness of the risks associated with driving, and that material should be consistent with existing GDL frameworks. Importantly, there has also been recommendations that programs should be evaluated and that evaluations should be based on observed behaviour change and crash-based data, that is, outcomes, rather than process evaluation alone (Department of Transport and Main Roads, 2009). While many driver education programs are offered, outcome evaluations of their effectiveness are not routinely conducted.

In Australia, GDL systems vary by jurisdictions and evolve constantly with new elements added and other elements removed. While GDL systems reduce crash risk for new drivers (Masten & Foss, 2010; Newstead & Scully, 2013; Neyens, Donmez, & Boyle, 2008; Pressley, Benedicto, Trieu, Kendig, & Barlow, 2009; Shope, 2007; Williams & Shults, 2010), there is a limited understanding of how they do this or which of the elements are the most effective, though there is evidence to support the benefits of extended learning periods, night time restrictions and passenger restrictions in reducing crash risks (Williams, 2007).

There are limited published evaluations of GDL systems within Australia. Recent research considered the impact of the changes introduced to Queensland's GDL system in mid-2007. These changes were designed to encourage learner drivers to obtain more driving experience and limit their driving in higher risk situations (Bates, Watson, & King, 2008). The key changes to the GDL system included: increasing the minimum period that a learner licence could be held from 6 months to 12 months; requiring all learner drivers to record a minimum of 100 hours of supervised driving practice within a learner log book; the creation of P1 and P2 licences (instead of the single provisional phase that existed previously); requiring both P1 and P2 drivers to display 'P' plates; introducing a high powered vehicle restriction; and not allowing P1 drivers to carry more than one passenger aged 16 to 23 years during the hours of 11pm to 5am (Newstead & Scully, 2013). Newstead and Scully (2013) reported on the preliminary results of a comprehensive evaluation of the impact of the changes to Queensland's GDL system on police-reported crashes and identified a reduction in fatal crashes, fatal and serious injury

crashes and in all crashes. It should be noted that there were limitations in the availability of crash data for the period after the changes were implemented in Queensland (Newstead & Scully, 2013).

In Queensland and NSW it appears that very few people attend a non-compulsory formal driver education course within the respective GDL systems. Telephone interviews conducted with drivers who had just obtained a provisional licence in these two states (prior to the mid-2007 licensing changes), identified that only 6.9% of participants from Queensland and 19.1% from New South Wales (NSW) reported completing a formal driver education and training course (not including professional driving lessons) while on a learner licence (Bates, Watson, & King, 2009). The NSW GDL system does require young drivers to complete 50 hours of pre-licence driving practice. Whilst the ACT's GDL system does not currently carry mandated levels of driver practice pre-licence, it does have a feature not included in other Australian GDL systems: a compulsory, pre-licence education program. This program seeks to encourage novice driver awareness of those specific behaviours that increase novice driver crash risk as well as to encourage understanding of the need for, and compliance with, the restrictions imposed under GDL. Driver education is also intended as a measure to increase the safety of young drivers by addressing one or more of the factors known to increase novice driver crash risk: overconfidence; risk taking behaviour; awareness/perception of hazards.

The *Road Ready* program was a national first and is a compulsory pre-licensing driver education program in the ACT that is delivered as part of the secondary school curriculum in Year 10 as well as by private providers for those unable to complete the program through school. Completion of *Road Ready* is a requirement for obtaining a Learner's Licence in the ACT (regardless of age) in an attempt to address attitudinal and belief related factors known to increase risk during the provisional licence period. Developed in 2000, its objective was for young people to become aware of safe road use and the program focused on driver education rather than practical driving-skills training. Sessions focus on problem solving, decision-making, raising awareness of the young driver crash involvement statistics, group discussions and dilemmas of driving. Training is provided to teachers delivering the program to make sure they are familiar with the course philosophy, content and resources (Ampt & Steer Gleave, 2002). Programs are also provided through non-school based centres (e.g. *Road Ready* Centres) so that all pre-licence drivers can complete this prior to seeking a Learner Licence.

1.2 The Current Study

To date, there have been no outcome evaluations undertaken of the *Road Ready* program, primarily due to the implementation of other important countermeasures at the same time as the original program (e.g. speed cameras) (OECD & ECMT, 2006). A process evaluation was carried out in 2002 (National Curriculum Services & Davies Gleave, 2001/2) and this found that the program was well-accepted by classroom-based teachers and students in 18 schools, along with their parents. A recent review of the materials used in the *Road Ready Road Ready* program for relevancy and acceptability to the target audiences as part of the implementation of the ACT Road Safety Strategy Action Plan identified that that program content is consistent with best practice principles in pre-learner and learner driver road safety education (Lennon et al., 2014). The review identified that the program content seeks to improve young driver knowledge of safe driving, targets attitudinal change, and is primarily aimed at the higher order levels of driving behaviour. Positive aspects of the program included the use of engaging interactive materials and activities, and the good reach of the program obtained by placing it as part of the requirements for learner licensing. However, it was noted that the program modules do not address some aspects of pre-licence education and in particular needed to emphasise best practice principles in supervision of learner practice. To date, no prospective outcome (offences and crash involvement) evaluation has been conducted on the effectiveness of the *Road Ready* program.

The current project is an outcome evaluation of the *Road Ready* program. Participants were pre-licence drivers in the ACT who were about to complete the *Road Ready* program through a *Road Ready* Centre. Outcome measures are attitudinal and behavioural change measured by self-report survey, and official offence and crash records. Survey (self-report) measures were collected at baseline (prior to completion of the *Road Ready* program) and followed up on three subsequent occasions (1 month post *Road Ready* program; 3-6 months after obtaining provisional licence; 9-12 months after obtaining P licence). After the final follow-up, participant

crash and offence records were accessed and matched with survey responses. Participant privacy was protected by de-identification at the point of matching of crash and offence data.

The questionnaire included measures of risk perception, attitudes towards driving, optimism bias (in relation to self-assessed skills, and to risk), intentions to comply with road rules and provisional licence restrictions, self-reported compliance with road rules and provisional licence restrictions after obtaining a provisional licence, and self-reported crash and offence involvement. Items in the questionnaire were based on those used in earlier research by Bates (unpublished thesis) focussing on young provisional drivers in two states, NSW and Queensland, in 2007 prior to changes in GDL requirements in each of those states. Adopting the same items afforded an opportunity to make comparisons between three different GDL requirements for provisional licencing: pre licence education program only (ACT); mandatory 50 hours driving practice, no mandatory educational component (NSW); and no mandatory driving practice no educational component (Queensland).

1.3 Study Aims

This report documents the methods and findings in relation to each of the following project objectives:

4. Estimate the length of time ACT drivers hold a Learner Licence prior to obtaining a Provisional Licences
5. Describe the number of hours and type of driving practice ACT Learner permit holders obtain prior to unsupervised driving on Provisional Licences
6. Evaluate the effectiveness of the *Road Ready* program in:
    a. Reducing novice driver offence and crash involvement for the first 6 to 12 months post provisional licencing (self-reported and official records)
    b. Encouraging attitudinal change at 6 months and 9 months post provisional licencing
    c. Encouraging compliance with provisional licencing restrictions of the ACT
    d. Preventing risky driver behaviours (i.e. speeding, alcohol consumption prior to driving).

1.4 Structure of the Report

Below, Section 2 outlines the approach and methods used to conduct the evaluation before moving on to describe the results obtained at time of writing the report. Section 3 details the conclusions from the evaluation and sets out recommendations for future follow up and the implications for policy on provisional licencing in the ACT.

2 Outcome evaluation of the effectiveness of the ACT Road Ready pre-licensing driver education program: findings from the surveys with *Road Ready* participants

2.1 Introduction

This section describes the methods, results and conclusions from the outcome evaluation of the *Road Ready* pre-licence education program in the ACT.

Ethical clearance for the study was granted by the QUT Human Research Ethics Committee in August 2015 and subsequent variations were sought and approved in November 2015 in order to vary the recruitment strategy and compensation structure. The research team consisted of Dr Alexia Lennon, Dr Lyndel Bates, Ms Amanda Evenhuis and Ms Klaire Somoray.

2.2 Method

In order to meet Objectives 1, 2 and 3, for this project, self-report surveys (paper and pencil, online and structured telephone interviews) with young people (16-20 years) were used to obtain measures of risk perception, attitudes, and intentions to comply with the road rules and restrictions on a Provisional Licence.

The overall design of the study was a pre and post intervention (the *Road Ready* program) assessment of self-report measures coupled with official crash and offence records approximately 6-9 months after participants obtained their provisional licences. Data was collected at four time points: base line (Time 1 – pre-Learner Licence); Time 2 (4 weeks post *Road Ready* program); Time 3 (6 months post *Road Ready* program) and Time 4 (9-12 months post *Road Ready*). Participants provided consent for access to their offence and crash records to be made between Time 3 and Time 4 (after driving for 6-12 months on their Provisional Licences). These follow up periods were underpinned by the rationale that the first six months of unsupervised driving (the provisional licence phase in the ACT) is the period of highest crash risk for novice drivers and therefore of greatest importance when attempting to reduce crashes and increase novice driver safety. A sample size of 400 pre-licence drivers was sought based on assumptions of attrition rates of 25-50% by Time 4, when matching of the objective outcome measures (crash and offence history) was planned. Participation was anonymous once young people had responded to the third survey, as personal details were stripped from the data at this point. Offence and crash records were then matched to the de-identified data via unique confidential code.

There were several psycho-social variables of interest in this study as such factors have previously been found to be important to predicting the motivational aspects of risky driving and to crash risk in novice drivers. Accordingly, self-report surveys collected measures of: perceptions of risk associated with driving, sensation seeking, behavioural dimension of differential association, optimism bias, and intentions to comply with road rules and provisional licence restrictions. Outcome measures of the effectiveness of the *Road Ready* program were the changes to these variables pre and post intervention, as well as changes to these pre and post commencement of unsupervised driving (that is, the learner versus the provisional phase of licensure).

The intention in this study was also to compare the patterns in results with those obtained from two other jurisdictions which have different graduated licencing systems and requirements and for which the Investigators (LB) have novice driver data. Specifically, data was available for NSW for 2007, when there was a requirement for 50 learner driver log book practice hours, and Queensland for 2008 prior to the prior to the implementation of required practice hours for learners. Thus it was anticipated that comparing data for the three jurisdictions might yield information that allows conclusions about the effect of pre-licence education (ACT) compared to no education, in conditions where practice hours are required (NSW) versus not required (QLD).

Participants

Pre-licence drivers in the ACT were invited to participate via email promotion of the study through *Road Ready* Centres. Eligibility criteria were that participants were aged 16-20 years, and were enrolled in the Road Ready program. Parental consent in writing was sought for under 18 year olds.

There were 151 participants who completed the Time 1 survey prior to completing the Road Ready program. An additional 48 EOIs were received from ineligible participants (over 20 years old; having already participated in the *Road Ready* program; no parental consent supplied).

Due to the longitudinal nature of the data, attrition was expected. A small number of participants were lost to follow up at each time point. In total, by the time of analysis, 24 participants had been lost to follow up for various reasons (incorrect contact details, missing date of birth, requested discontinuation).

At the time of analysis, there were thus 127 participants who had supplied Time 1 responses. Of these, 116 participants had completed the Time 2 survey (the remaining participants having been enrolled in the study less than the required 4-6 weeks). Time 3 was collected after 6 months of completing the program. At the time of analysis, 71 participants had supplied responses to the survey (55 participants were not yet eligible for their Time 3 surveys). Time 4 was collected 9 to 12 months after participants completed the program. Only 5 participants were both eligible to apply for their provisional licences and were due to be followed up for Time 4 responses by the time of analysis.

Materials

As mentioned above, in order to permit later comparisons of the results of this study with data from previous studies in NSW and Queensland, the measures of the psycho-social variables were based on those used in the

doctoral studies of CI Bates. Each of these are described in more detail below. A copy of the complete Time 1 to Time 4 survey is included in Appendix B

Self-reported perception of risk

To assess perception of risk involved in driving, participants were asked to indicate how risky they had thought driving was at each time point (Time 1, Time 2, Time 3). Questions varied slightly at the different time points. Prior to completing the *Road Ready* course (Time 1), participants were asked to indicate on a scale of one (not very risky) to five (very risky) how risky they believed driving was when they first started to lean to drive ("How risky do you think driving was when you first started?"). After obtaining their licence (L or P), they were asked at Times 2 and 3, how risky they believed driving was at the time of completing the survey ("How risky do you think driving is now?") and how risky they thought driving was when they first started ("How risky do you think driving was when you first started?").

Sensation seeking

The driver thrill-seeking subscale from the Driver Stress Inventory (Matthews, Desmond, Joyner, Carcary, & Gilliland, 1997) was used to measure sensation seeking within a road safety context. For this measure participants respond to questions about their usual or typical feelings about driving on a response scale of 1 (not at all) to 10 (very much) at each time point. An example item is: "I get a real thrill out of driving fast".

Optimism bias

Optimism bias is the human psychological tendency to believe that one is more likely than one' peers to experience pleasant or positive outcomes, and less likely to experience negative or unpleasant life events or outcomes. Previous research with young novice drivers suggests that stronger optimism bias is associated with greater tendency towards risk taking behaviour (Bates, Davey, Watson, King, & Armstrong, 2014). For this reason, and to allow comparisons with data available for young novice drivers from other states (Bates, unpublished doctoral thesis, 2012, available from https://eprints.qut.edu.au/51052/), two measures of optimism bias were included at all time points. The first measure was in relation to driving skill and asked how skilful participants believed they were compared to all other drivers on seven driving behaviours (e.g. conforming to traffic rules, perceiving hazards in traffic). Responses were on a scale of 1 = "well below average" to 5 = "well above average".

A second measure focused on risk of one's driving behaviours resulting in unpleasant (receiving a fine) or negative (e.g. being injured) outcomes or events relative to one's peers. This form of optimism bias has been termed illusory invulnerability (Bates, Watson, King & Muir, in preparation; Hatfield, Fernandes, Faunce & Job, 2008; Hatfield, Fernandes & Job, 2014). Participants to rate their chances of experiencing eight driving and health-related outcomes (e.g., your chances of being fined while driving, your chances of developing cancer) compared to "drivers of your age and gender". Responses were on a five-point scale (1 = "well below average" to 5 = "well above average").

Behavioural dimension of differential association for other drivers

A measure of the behavioural dimension of Akers' differential association factor was included at each time point, based on Bates' doctoral work (available from https://eprints.qut.edu.au/51052/). This measure consisted of nine items that asked participants' perceptions of how many ("None", "Few", "Some", Many") other drivers behave in particular ways while driving (5 compliant behaviours; 4 offences). Example items are: Do other drivers obey the road rules? ; Do other drivers get caught drink driving? For this measure, high scores indicate beliefs that other general drivers are either more likely to commit driving violations or more likely to be caught doing so (compliant behaviours are reverse scored e.g. "Do other drivers wear a seatbelt?").

Intentions while driving on a provisional licence

At Time 1 and Time 2 participants were asked on a scale of 1 (very unlikely) to 7 (very likely) whether they intended to comply with specific road rules and restrictions on their provisional licence or drive under certain conditions. Items asked about complying with speed restrictions, drink driving, using a seatbelt, following at a safe distance, displaying P plates, driving with passengers, driving at night, and complying with the road rules in general. Example items were: How likely are you to limit your driving at night?; How likely are you to obey the speed limit?

Procedure

Following ethical clearance, recruitment was primarily conducted through the Road Ready Centres in the ACT (located at Watson and Phillip). Negotiations with Road Ready Centres/Freebott began in June-July 2015 and built on pre-existing relationships with Mr. Steve Lake and his staff at Freebott. Permission to recruit eligible young drivers through the Road Ready website and Road Ready Centres was granted. Freebott, the private provider of the *Road Ready* program in the ACT approached participants on our behalf. In addition to the liaison and partnership with Freebott, the project also involved liaison with the Directorate of JACS to access the offence and crash data of participants.

Recruitment was at the point of registering for the *Road Ready* program. The study was promoted to young drivers and their parents in the form of a flyer accessed via a link provided on the sign-up page of the Road Ready website, the Road Ready Facebook page, and the CARRS-Q website. After completing an Expression of Interest (EOI), information and consent materials were supplied to eligible participants. Where participants were younger than 18 years, parental/or guardian consent to contact the young person was sought prior to speaking to the participant.

When it became evident that rates of recruitment were very low, alternative methods of promoting the study were trialled. The most effective of these was promoting the study in the *Road Ready* Centre buildings and providing hard copies of the information, consent and Time 1 surveys for young people to complete immediately prior to the start of the Road Ready sessions in which they were enrolled. Facilitators of the *Road Ready* program were asked to make participants and their parents/or guardians aware of the study when they were signing up to complete the *Road Ready* course. The signed parental/guardian (if applicable) and participant consent forms along with completed Time 1 surveys were then posted to the researchers pre-prepared envelopes to maintain confidentiality. Where parental/or guardian consent was not included in the documentation received, a member of the research team made contact with the parent/guardian by phone or email to obtain consent. In addition to this variation, the research team continued to follow up all EOI's received via the Road Ready and CARRS-Q website as described above.

The study's follow up procedure -specifically the Time 2 follow up- required a variation in the method of delivery in an effort to ensure the retention of participants as well a response rate of at least 75%. Initially, the Time 2 follow up survey was collected primarily via an on-line survey made available via the QUT online survey portal 'Key Survey'. Participants were sent a link to the Time 2 survey via their email addresses 4 weeks after completion of the *Road Ready* program. A reminder email was sent to participants who had not completed the Time 2 survey within a week. However, low rates of response to the reminders necessitated a change in procedure to collecting the Time 2 responses telephone instead. This resulted in an improved rate of response from 52.3% to 81% (varied over the successive time points).

Originally participants were offered $50 in gift vouchers at two points ($25 after follow up Time 2 and $25 after follow up Time 4). However, this approach seemed inappropriate once recruitment and data collection changes had been made. Accordingly, the schedule of gift vouchers was altered to send these in three parts: $10 after completion of the first survey (Time 1), $15 after completion of the second survey (Time 2), and $25 after the final survey (Time 4).

2.3 Results

Participant characteristics

Complete data was available for 127 pre-learner licence drivers (male *n* = 61, female *n* = 66) who met the eligibility criteria (completed the *Road Ready* driver education course; aged under 20 years). The sample had an age range of 15-21 (*M* = 16.52, *SD* = 1.68).

Data Preparation

All analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 21. Analysis of the descriptive data revealed that there were minimal missing data across variables (0.4% to 3.6%). Imputation of the mean was carried out in order to deal with the missing values for each subscale. Mean imputation is usually discouraged as this method often results in reduced variance estimates within the variables (Schafer & Graham, 2002). However, when missing data is minimal, which is the case in this study, subscale mean imputation is a reliable method for preserving power (Schafer & Graham, 2002). Mean imputation involves substituting the missing value with the participant's mean score on each subscale. Pairwise deletion was also carried out in subsequent analysis to further preserve power. Data was also screened for errors and abnormalities. Issues were found within the data but were subsequently corrected (for example, some participants used the current year for their birthdays - these issues were corrected by cross-checking birth dates).

Descriptives

The descriptive statistics and reliability of the subscales are presented in Table 1. The reliability analysis was carried out on survey data collected at Time 1. As can be seen, all subscales (with the exception of Differential Association, other drivers) have reliability scores above the Cronbach's α = 0.70, which is an acceptable measure of scales internal consistency (Kline, 1999). Deletion of individual items in the Differential Association, Other Drivers scale did not improve its internal reliability, therefore, all items were retained. For the optimism bias risk subscale, deletion of the item, "your chances of staying healthy during next winter" improved internal reliability from .75 to .82. Conceptually, this question does not appear to examine one's optimism bias risk while driving. Therefore, this item was deleted for the subsequent analyses.

Table 1.

Psycho-social Characteristics of Young Learner Drivers in the ACT (N = 141) on Measures of Sensation Seeking, Optimism Bias, Differential Association of Other Drivers and Provisional Licence Intentions (Time 1)

Scale	*M (SD)*	Range	α
Sensation Seeking	28.19 (13.55)	9 – 71	.86
Driving skills self-assessment (Optimism Bias Skills)	20.33 (6.20)	7 – 35	.90
Illusory Invulnerability (Optimism Bias Risk)	11.51 (4.64)	6 – 28	.81
Differential Association- Other Drivers	30.28 (2.93)	23 – 39	.54

Risk Perception	3.09 (0.99)	1 - 5	-
Behavioural Intentions once on Provisional Licence	66.35 (7.58)	35 – 77	.71

Note. Descriptives presented in this table are calculated using Time 1 data only; Missing data was dealt with using pairwise deletion.

Length of time ACT drivers hold a learner's permit prior to obtaining provisional licences

Of the 5 participants who had reached the Time 4 stage at time of data analysis (August 2016), only 3 participants had obtained their provisional licence since completing their *Road Ready* driver education course. These young people had held their learner's permit for 11 months (n = 2) or 3 months (n = 1) before applying for a provisional licence. Time 3 data (i.e. participants who had reached 6-9 months post *Road Ready* completion) consisted of 65 participants who had held a learner's permit for an average of almost 6 months (25 weeks, *SD* = 15.62).

Number of hours and type of driving practice obtained on learner licences prior to unsupervised driving on provisional licences

At the time of analysis, Time 2 data was available for 116 participants (11 participants having not responded at the time of analysis and in the process of being reminded). Of these, 14 had not yet applied for a learner licence.

Most of those who had obtained a learner licence indicated that they had less than 10 hours of supervised driving with a parent or a driving instructor between completing the *Road Ready* Program and Time 2 (4-6 weeks post program). Of these, data for Time 3, approximately 6 months after completing the *Road Ready* program, was available for 71 participants (45 participants having not yet responded to follow up). By this point almost 40% of the participants indicated they had received 10 to 25 hours of supervised driving on their learner licences (see Table 2). Only 11 young people (16%) had received 50 hours or more of supervised practice by Time 3.

Of the 5 participants who were due for Time 4 follow up and were also eligible to apply for their provisional licences at the time of analysis (aged 17 or older; 6 months on Learner licence), only 3 participants had actually done so. These three indicated that they had obtained 10-25 hours (n = 1), and 26-50 hours (n = 2) of supervised practice driving.

Effectiveness of the Road Ready program in reducing novice driver offence and crash involvement for the first 6-12 months post provisional licencing

Two measures of offences and crashes were obtained: self-report; and official records. Of the 3 participants who had obtained their provisional licences since completing the *Road Ready* program, none had an official offence or crash. However 1 participant self-reported both a crash involving another driver and 2 near misses. A second participant reported a near miss only.

The sample will be followed up at later times in order to allow more meaningful analyses and conclusions in relation to this measure.

Table 2.

Young People's Reported Hours of Supervised Driving Practice Since Attending the* Road Ready *Program

Time point	Hours of Supervised Driving	*n*	Percentage
Time 2	<10	63	64.9%
	10-25	29	29.9%
	26-50	3	3.1%
	51-75	2	2.1%
	Total	97*	
Time 3	<10	13	18.6%
	10-25	27	38.6%
	26-50	19	27.1%
	51-75	3	4.3%
	76-100	6	8.6%
	>100	2	2.9%
	Total	70	

Note. Analysis conducted on participants with Learner's permit only (i.e. excludes 14 participants who had not yet applied for learner licence at Time 2)
*Five participants had data missing for supervised driving hours at Time 2 and are not included in the total.

Effectiveness of the Road Ready program in instilling attitudinal change and risk perception

Repeated measures ANOVA analysis was carried out to determine the effectiveness of the *Road Ready* program in instilling effective attitudinal change. Data analysis was only carried out on responses from participants for whom there was data for Times 1-3. This was to allow a comparison between participant attitudes before exposure to the Road Ready program, shortly after exposure to the program, and 6 months later to see if there had been changes in measures as a result of the program.

Assumptions for normality of residuals, outliers and sphericity were examined before conducting the analysis. While outliers were observed in the data, none were unduly influential, as none exceeded the cut-off value during the inspection of the Cook's distance statistics (value of 1). Breaches in the normality of the residuals were observed within the variables of interest but ANOVA is usually robust to such breaches. More importantly, the Mauchly's test of sphericity indicated that the assumption of sphericity was not breached for any variables of interest (all test values above $p > 0.05$). Therefore, no transformation or correction was applied to the data.

The univariate test indicated that significant differences between time points were only observed for optimism bias in relation to driving skill, F (2, 134) = 5.59, p = .005, and Differential Association with other drivers, F (2, 140) = 8.77, p < .001. No significant differences were found for the measure of sensation seeking, F (2, 138) = 1.21, p = .301, optimism bias risk, F (2, 140) = 1.59, p = .209, or perception of risk, F (2, 128) = 0.98, p = .379. There were also no observed differences between Time 1 and Time 2 when participants were asked what their behavioural intentions were for driving after they obtained a provisional licence, F (1, 70) = 0.74, p = .392.

Planned post hoc pairwise comparisons (with Bonferroni adjusted confidence intervals) were conducted to identify which time points were significantly different for the measures of optimism bias skills and differential association with other drivers.

Patterns in the results (see Table 3) suggest that participants' optimism bias (skills) increased over time. However, only the difference between Time 1 compared to Time 3 reached statistical significance, M_{diff} = 2.38, p = .005, 95% CI [-4.15, -0.61], d = 0.46. According to Cohen's D convention, this effect size is medium. In contrast to this, participants' Differential Association- other drivers decreased over the three time points. Significant differences were detected between Time 1 and Time 2, M_{diff} = 1.06, p = .009, 95% CI [0.21, 1.90], d = 0.37 and between Time 1 and Time 3, M_{diff} = 1.58, p = .001, 95% CI [0.57, 2.58], d = 0.54. Effect sizes for these were small to medium, and medium, respectively.

Table 3.

Young Driver Responses to Psycho-social Measures Across Three Time Points: Time 1 (before), Time 2 (4 weeks), Time 3 (6 months) after Completion of the Road Ready Program (ACT sample)

	Time 1 (n = 116)		Time 2 (n = 97)		Time 3 (n = 65)	
Measure	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sensation Seeking	27.64	12.90	29.3	12.83	28.37	12.72
Optimism Bias Driving Skills (Self-assessment of driving skill)	20.22[a]	6.10	21.35[a,b]	5.91	22.60[b]	4.05
Optimism Bias (Risk) (Illusory Invulnerability)	15.35	4.14	14.37	3.49	14.77	4.47
Differential Association- Other Drivers	30.37[c]	2.80	29.31[d,e]	2.94	28.79[e]	3.01
Perception of Risk	3.02	1.01	3.18	1.15	3.18	0.90
Behavioural Intentions once on Provisional Licence	66.21	7.65	65.41	7.01	-	-

[a,b,c] For rows, figures with different superscripts differ significantly

These patterns suggest that learner drivers in the sample became more confident as drivers between completing the *Road Ready* program and obtaining some driving practice on their learner licences, and thus their perceptions of their own driving skills in relation to others increased. However, their exposure to supervised on-road practice driving appears to be associated with a reduction in their perceptions of their relative risk, including driving-related risks.

The responses to the measure of Differential Association-other drivers suggest that learners in the ACT perceive that other drivers as generally obeying the road rules. However, it appears that their perceptions decrease once they begin their on-road practice driving, and that the more practice they get, the more they are likely to perceive others as not obeying the road rules, but not necessarily being caught breaking them. Patterns in responses to this measure are difficult to interpret at this point and future responses will be examined in more detail.

Perceptions of the risks of driving corresponded to the midpoint, and these did not change significantly over the three time points.

Sensation seeking, perceptions of driving risk and intentions once driving on a provisional licence: comparisons between ACT, NSW and Queensland

It was the intention in this evaluation to examine whether data available for young learner drivers from NSW and Queensland would enable inferences to be drawn about the effects of different types of graduated licencing conditions. In 2007 the legislation in relation to the conditions for obtaining a drivers' licence changed in both

NSW and Queensland. CI Bates collected psycho-social and other measures from a sample of learner drivers in each of these states immediately prior to the changes in conditions. For learner drivers in Queensland prior to the changes, neither an education program nor minimum supervised practice hours were required. NSW learner drivers prior to the changes were required to complete 50 logged supervised driving practice hours. Thus comparisons across the three states offer the opportunity to explore the differences (if any) between learners required to complete a pre-licence education program (ACT) with those who do not have to do this, in conditions where practice hours are required (NSW) versus not required (Queensland). Tables 4 and 5 display the results for learner drivers in the three different states. Data for NSW and Queensland is drawn from Bates' unpublished thesis (available from https://eprints.qut.edu.au/51052/).

The NSW and Queensland samples

Learner drivers for the NSW and Queensland sample were approached outside licensing centres and invited to participate. Researchers obtained contact details for those who indicated interest and these were followed up by telephone to conduct the survey verbally. In total, 257 Queensland and 237 NSW learner drivers agreed to participate, and of these, survey interviews were successfully completed with 218 learners in Queensland and 172 learners in NSW. Responses from these two groups to the various measures that were used in the current study were extracted from the data for the original project. Because of the time at which participants were approached (applying for a provisional licence), both the NSW and Queensland learners were slightly older (modal age 17 years) than the ACT participants in the current study.

Table 4.

Young Driver Responses to Psycho-social Measures for the Learner Licence Phase in the ACT (2016), NSW and Queensland, 2007 (prior to changes in graduated licencing requirements for NSW and Queensland)

	ACT*		NSW*		QLD*	
Measure	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sensation seeking	29.01	13.10	31.87	15.04	31.18	15.53
Driving Skill Self-assessment	21.12	5.78	25.00	3.95	25.06	3.58
Illusory Invulnerability	14.08	3.99	14.96	4.03	14.44	3.43
Differential Association with Other Drivers	29.47	2.88	27.62	2.86	28.10	2.93
Perception of Risk	3.19	1.10	3.25	1.15	3.46	1.29
Behavioural Intentions once on Provisional Licence						
Display P-plates‡	6.79	0.79	6.69	0.90	1.65	1.57
Obey speed limit†	6.53	0.75	5.60	1.67	6.27	1.13
Limit night driving	4.94	1.76	3.43	2.02	2.99	1.88
Drive with peer passengers in day	5.37	1.55	5.38	1.71	5.20	1.95
Drive with peer passengers at night	4.57	1.78	4.99	1.84	5.23	1.83
Not drive after a couple of drinks even if you may not be over the limit	6.40	1.38	6.47	1.52	6.62	1.37
Not break road rules even if know won't get caught	6.12	1.44	5.52	1.75	5.67	1.84

†Question for NSW learners referred to the limit on provisional drivers' speeds
‡Question for Queensland referred to 'non-compulsory' P plates
ACT *N* = 115 to 116
QLD *N* = 201 to 218
NSW *N* = 166 to 172

In order to account for the different sample sizes for the three groups, a non-parametric test was conducted to examine the differences between in the psychosocial measures for the young drivers in their learner licences living in ACT, QLD and NSW.

Results from a Kruskal-Wallis H test are displayed in Table 5 and revealed statistically significant differences on the measures of Driving Skill Self-assessment, Illusory Invulnerability, Differential Association- other drivers and perceptions of risk between the three samples. No significant difference was found in the sensation seeking scores between the three samples. Figures which are statistically significant are given in **boldface** in the table.

Table 5

Results of significance testing (Kruskal-Wallis H test) for Young Driver Responses to Psycho-social Measures for the Learner Licence Phase in the ACT (2016), NSW and Queensland, 2007 (prior to changes in graduated licencing requirements for NSW and Queensland)

	ACT	NSW	Qld	**Kruskal Wallis H Test**	**Post hoc comparisons**
	Mean Rank	Mean Rank	Mean Rank		
Sensation Seeking	237.30	263.61	253.03	$\chi^2(2) = 2.25$, $p = 0.325$	No Significant Difference
Driving Skill Self-assessment	**173.73**	272.09	280.20	$\chi^2(2) = 44.98$, $p < 0.001$	ACT-NSW; ACT-QLD
Illusory Invulnerability	**221.20**	266.97	252.35	$\chi^2(2) = 7.06$, $p = 0.029$	ACT-NSW
Differential Association with Other Drivers	**296.35**	212.04	234.45	$\chi^2(2) = 26.12$, $p < 0.001$	NSW-ACT; QLD-ACT
How risky do you think driving is now?	**234.83**	243.19	272.78	$\chi^2(2) = 6.98$, $p = 0.030$	ACT-QLD*
Behavioural Intentions once on Provisional Licence					
Display P-plates‡	360.04	352.56	**117.95**	$\chi^2(2) = 397.81$, $p < 0.001$	QLD-NSW; QLD-ACT
Obey speed limit†	290.55	**212.19**	266.38	$\chi^2(2) = 27.72$, $p < 0.001$	NSW-QLD; NSW-ACT
Limit night driving	**348.74**	242.52	211.48	$\chi^2(2) = 69.96$, $p < 0.001$	QLD-ACT; NSW-ACT
Drive with peer passengers in day	249.37	258.21	251.98	$\chi^2(2) = 0.31$, $p = 0.855$	No Significant Difference
Drive with peer passengers at night	**215.76**	253.32	273.72	$\chi^2(2) = 12.37$, $p = 0.002$	ACT-QLD
Not drive after a couple of drinks even if you may not be over the limit	**227.26**	250.94	267.22	$\chi^2(2) = 14.16$, $p = 0.001$	ACT-QLD
Not break road rules even if know won't get caught	**281.71**	233.21	252.18	$\chi^2(2) = 8.85$, $p = 0.012$	NSW-ACT

*Note: Just reaching significance at p = .059 level (adjusting for familywise type I error). It is possible that the significance found in the Kruskal Wallis H-Test is very small which is not reflected in the pairwise comparison test

As shown in Table 5, it appears that there were no differences between learners in the three different jurisdictions in relation to responses to the measure of sensation seeking.

Results indicate that learners in the ACT are significantly less confident compared to learners in NSW and Queensland about their own driving skills. However, they also appear to have significantly lower perceptions of their own likelihood of experiencing negative driving outcomes (Illusory Invulnerability) than NSW learners, and lower perceptions of risks of driving than Queensland learners.

Overall, learners in all three jurisdictions indicated that they intended to obey the speed limits applicable to them, though learners in NSW, where maximum speeds for provisional licence holders at the time was 90 kph (and lower than that for open licence holders) were significantly less likely to intend to do this than learners in the ACT. Intentions to display P plates also differed between states, with Queensland learners, where this was not mandatory at the time, being significantly less likely than learners from either NSW or the ACT to intend to display P plates.

Encouragingly, learners from each jurisdiction indicated that they intended comply with the requirement not to drink drive, and results suggest that ACT learners were significantly more likely to intend this than learners in the other two jurisdictions.

Learners in the ACT were significantly more likely than the learners in the two states to indicate that they would limit their night driving once they were on provisional licences. It is also notable that learners in Queensland, unlike those from the other two jurisdictions, generally indicated that they would be unlikely to limit their night time driving once driving unsupervised.

The level of intention to drive with peer passengers was somewhat lower for each sample of learners than for the other behaviours, but still indicated an overall positive intention. Intentions to drive with peer passengers at night were somewhat less strong, but were still positive overall for all learners regardless of location, with ACT learners being significantly less likely than Queensland learners to intend to drive with peer aged passengers at night. Coupled with their intentions for reduced night driving, this pattern suggests that learners in the ACT may have absorbed some of the key messages in relation to the greater risks associated with young novice driver crash risks, an aim of the *Road Ready* program.

Taken together, the results are encouraging and suggest that there may be some positive benefits from exposure to the *Road Ready* program for these ACT learners. When compared to Queensland and NSW, learners in the ACT are more likely to report strong positive intentions once on their P plates to obey the road rules, speed limits and to voluntarily adopt reduced exposure to some riskier driving conditions (night driving, peer passengers at night). They are also more likely to intend to comply with generally observing the road rules even if they know they won't get caught. However, while exposure to the *Road Ready* program appears to be associated with promising intentions, there was no apparent increase in ACT learners' perceptions of the risks of driving. Moreover, their overall perceptions were significantly lower than those of NSW or Queensland learners, suggesting that this key message of the *Road Ready* program is not being absorbed.

Effectiveness of the Road Ready program in encouraging compliance with provisional licencing restrictions of the ACT

Measures for this variable of interest were intended to be taken from the responses to the Time 4 surveys once young people had obtained and been driving on their P licences. As the number of participants on provisional licences by the time of analysis was small, it is not meaningful to conduct an assessment of the effectiveness of the program on encouraging compliance. However, later analyses will seek to do so and it is anticipated that results will be useful and informative. For the current analysis, the above results for Time 3 suggest that ACT learner drivers intend to comply with the restrictions on their provisional licences once they have them. Coupled with the responses in relation to intentions to adopt recommended voluntary reductions in exposure to night driving and carrying peer passengers at night, the Time 3 responses are promising.

Given that self-reported practice driving hours for Time 3 and the length of time spent on learner licences suggest that most learners will have had 50 or more hours of supervised driving before seeking their P licences, it is likely that their responses to Time 4 measures will represent similar levels of driving experience to those for the NSW and Queensland samples. Comparisons between the different states should thus be possible and provide a basis on which to draw inferences about the effect of an education-only (ACT) pre-licence process versus a minimum driving practice process (NSW) and a process where neither are imposed (Queensland pre 2007).

2.4 Discussion

While prior research has identified that teachers and students perceive the Road Ready course as effective and beneficial (Lennon & Bates, 2015), there have been no outcome evaluations of the course conducted to date. However, the results above suggest that there are some promising findings in relation to learner drivers' perceptions and intentions once on their provisional licences in the ACT and the potential beneficial effects of the *Road Ready* program.

Extrapolating from the reported driving practice hours for Time 3, it seems reasonable to expect that the majority of learners in this sample will spend 6 or more months on their learner licences and complete at least 50 hours of practice driving before applying for their provisional licences, which is a positive sign given that there are no mandated hours of driving practice in the ACT. There is some indication within the research that obtaining approximately 120 hours of supervised practice is beneficial (Gregersen, Berg, Engstrom, Nolen, Nyberg & Rimmo, 2000). However, the optimal amount of practice is not yet known. Additionally, licensing authorities should be careful when mandating hours of practice as it may reduce the amount of supervised practice that an individual would have otherwise obtained (Bates, Watson & King, 2010). Despite this, the ACT government could consider whether mandating a minimum number of supervised driving hours for learners would be beneficial.

Results for the measures of optimism bias in relation to skills (self-assessed driving skill) and risk (Illusory Invulnerability) can be interpreted as indicating that ACT learners are both increasingly confident about their driving skill and less likely to think that negative consequences will happen to them while driving when compared with their peers. This combination of results suggests that the *Road Ready* program does not affect learner driver attitudes and beliefs. Possibly the content of the risk items, which focus on outcomes resulting from illegal behaviours, were perceived as not applying to the self for this sample of learner drivers on the basis that they generally intend to comply with the road rules and the restrictions on their provisional licences. Additionally, the relationship of illusionary invulnerability to several driver behaviours is complicated (Fernandes, Hatfield & Job, 2010). It is possible that this study did not adequately capture these nuances.However, this is an important finding as it can enable Road Ready to consider the content and way that they teach novices about risk and whether this can be improved.

The lack of differences between learners in the ACT, NSW and Queensland for sensation seeking is to be expected given that sensation seeking tendency is thought to be part of personality and relatively stable and at a particular life stage (though known to decrease over the life span, Begg & Langley, 2001). Factors that might influence sensation seeking within a particular population are more related to developmental and cultural factors, which would not be expected to vary according to where in Australia a young person lives. However, given the strong link between sensation seeking and risky driving (e.g. Jonah, 1997; Dahlen & White, 2006), it may be possible to make this link more personalised for *Road Ready* students. One method of doing this may be having students undertake some kind of self-assessment task within the course regarding their own level of sensation seeking.

Comparisons across the three jurisdictions for the measures of self-assessed driving skill and Illusory Invulnerability suggest that learners in the ACT may be less prone to overconfidence about their driving than learners in NSW and Queensland. However, this needs to be interpreted in conjunction with the patterns of perceptions of risk, which suggested that ACT learners were also less likely than NSW or Queensland learners to appreciate their own likelihood of experiencing negative driving outcomes. This may not indicate a positive benefit from exposure to the *Road Ready* program, as learners may fail to exercise sufficient caution or awareness as a result of not perceiving their vulnerability. It may also be that ACT learners' lower level of self-assessment of driving skills is related to their lower exposure to practice driving (under 10 hours for two thirds of the sample) compared to the other two groups at the time of providing their responses (average of 50 or more hours). Later comparisons may reveal that ACT learners become more susceptible to overconfidence as their exposure to on-road driving increases, as suggested in the responses to Time 3 surveys to date. If so, this may increase rather than decrease their risk.

Patterns in the responses relating to their intentions once on their provisional licences suggest that learners in each of the jurisdictions generally intend to comply with the road rules, with ACT learners having significantly stronger intentions to do so than the other two groups. Stronger intentions among ACT learners to voluntarily limit their exposure to riskier driving conditions, especially night driving and carrying peer aged passengers at night, once driving unsupervised are encouraging. These suggest that exposure to the *Road Ready* program may increase awareness of the factors associated with young driver crashes among learner drivers. However, there were two somewhat contradictory results as well, in that ACT learners indicated significantly less strong intentions (though it should be noted these were still strongly positive) than Queensland drivers to not drive after consuming alcohol. There was no apparent increase in ACT learners' perceptions of the risks of driving after exposure to the *Road Ready* program. Moreover, their overall perceptions of risk were significantly lower than those of NSW or Queensland learners, suggesting that this key message of the *Road Ready* program is not being absorbed. Additionally, while ACT learners indicate that they intend to comply with the road rules, these intentions may not transfer into actual behaviours. The collection of the follow up survey data may help to identify if this is the case. Additionally, while ACT learners indicate that they intend to comply with the road rules, these intentions may not transfer into actual behaviours. The collection of the follow up survey data may help to identify if this is the case.

Limitations

Whilst the variation in the recruitment, follow up strategy and compensation structure described above provided a somewhat improved response rate, the smaller than desired sample size had an effect on the analyses. Given the slower than anticipated recruitment rate, the follow up for Time 3, originally scheduled to occur once the participants had progressed to their Provisional Licences, had to be changed to occur once participants had obtained their Learner Licences (a requirement imposed by ethics approval). Further, participants must be at least 17 years of age before they can obtain their Provisional Licence in the ACT. Of the n =141 sample obtained, n = 110 participants were aged between 15.9-16 years (Pre-learner and Learner Driver stage) at the time of sign up (from August 2015) and so not able to apply for provisional licences during the timeframe of the funding for this study. As a result, the Time 4 follow up component of the analysis was delayed for a large proportion of the sample. It is recommended that this form part of a future study. Despite the limitations identified above, meaningful analysis of data collected for Times 1-3 were still possible and have been reported above. Another issue for consideration is if there is a cohort effect present for the ACT, Queensland and NSW samples. The Queensland and NSW data was collected prior to the changes in the licensing systems in these two states in mid-2007 while the data for the ACT sample was collected in 2015-2016. However this comparison, despite the different times of data collection, allowed the ACT sample to be compared to two different licensing systems.

3 Conclusions and Recommendations

It is disappointing that the anticipated sample size for this study was not obtained during the period that was planned, and it is therefore difficult to draw definite conclusions about the impact of the Road Ready program on key measures and variables at the time of writing. Overall, the results of this study regarding the outcomes of the Road Ready program are inconclusive. It appears that while some psychosocial elements are influenced by the program, others are not. Despite this, there are still several recommendations that can be made to improve novice driver safety within the Australian Capital Territory.

The first recommendation is to finish the planned study. Thus, the sample should be followed up and crash and offence data obtained for participants. This will allow an outcome evaluation of the program to be completed in the future. Given the amount of time required for recruitment, the age that novices complete the *Road Ready* program, and the length of time that they spend on a learner licence before obtaining a provisional licence, it is expected that this recruitment process and follow up might require a significant length of time.

The second recommendation is that the *Road Ready* program continued to be offered within the Australian Capital Territory. While the findings of this program of research are somewhat contradictory and less clear cut

that is desirable, it appears that the program is influencing novice drivers in some positive ways. Thus, at least until the crash and offence data outcomes can be considered, the *Road Ready* program should be continued.

Finally, it is most likely that the benefits of driver education will be maximised when combined with a graduated driver licensing system that contains additional features (Bates, Watson & King, 2006). Thus, consideration should be given to whether a more extensive graduated driver licensing system that incorporates best practice principles should be introduced into the Australian Capital Territory. Elements that should be given the highest priority are minimum required hours (and types) of supervised learner driving practice (Gulliver, Begg, Brookland, Ameratunga & Langley, 2013) or increasing the minimum age at which individuals are able to obtain their learner licence (Preusser &Tison, 2007).

References

Ampt, E., & Steer Davies Gleave. (2002). *Evaluation of a Curriculum-based Training Program for Novice Drivers from the Perspective of Teachers, Students and Parents.* Paper presented at the 2002 Road Safety Research, Policing and Education Conference, Adelaide, SA.

Bates, L., Allen, S., Armstrong, K., Watson, B., King, M., & Davey, J. (2014), Graduated driver licensing: An international review, *Sultan Qaboos University Medical Journal 14*(4) 432-441.

Bates, L., Davey, J., Watson, B., King, M. & Armstrong, K. (2014). Factors contributing to young driver crashes: A review. *Sultan Qaboos University Medical Journal. 14*(3), 297-305.

Bates, L., Watson, B. & King, M. (2006). Competing or complementing: Driver education and graduated driver licensing. In *Proceedings of the Australasian Road Safety Research, Education and Policing Conference.* Sydney: ACRS

Bates, L., Watson, B., & King, M. (2008). The structure of the learner licence affects the type of experiences novices gain during this phase: Examples from Queensland and New South Wales. *Journal of the Australasian College of Road Safety, 19*(4), 36-42.

Bates, L., Watson, B., & King, M. (2010). Required hours of practice for learner drivers: A comparison between two Australian jurisdictions, *Journal of Safety Research*. 41, 93-97

Bates, L., Watson, B., King, M., & Muir, J. (in press). Is sensation seeking, self-assessment of driving skill and illusory invulnerablity stable over time in young novice drivers?

Begg, D. J., & Langley, J. (2001). Changes in risky driving behavior from age 21 to 26 years. *Journal of Safety Research, 32*(4), 491-499. doi:10.1016/S0022-4375(01)00059-7

Dahlen, R., & White, R. (2006). The Big Five factors, sensation seeking, and driving anger in the prediction of unsafe driving. *Personality and Individual Differences, 41*(5), 903-915. doi:10.1016/j.paid.2006.03.016

Department of Transport and Main Roads. (2009b). *A guide to evaluating road safety education programs for young adults.* Brisbane, QLD, Australia: Department of Transport and Main Roads, Queensland Government (TMR).

Fernandes, R., Hatfield, J., & Job, R. F. S. (2010). A systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers. *Transportation Research Part F: Traffic Psychology and Behaviour, 13*, 179-196.

Gregersen NP, Berg HY, Engstrom I, Nolen S, Nyberg A, Rimmo PA. Sixteen years age limit for learner drivers in Sweden: An evaluation of safety effects. Accid Anal Prev 2000; 32:25–35. doi: 10.1016/S0001-4575(99)00045-7

Gulliver P, Begg D, Brookland R, Ameratunga S, & Langley J. (2013). Learner driver experiences and crash risk as an unsupervised driver. J *Safety Res 2013; 46:*41–6. doi: 10.1016/j.jsr.2013.03.007

Jonah, B. (1997). Sensation seeking and risky driving: A review and synthesis of the literature. *Accident Analysis & Prevention, 29*(5), 651-665.

Hatfield, J., Fernandes, R., Faunce, G., & Job, R. F. S. (2008). An implicit non-self-report measure of attitudes to speeding: Development and validation. *Accident Analysis & Prevention, 40*(2), 616-627. doi:10.1016/j.aap.2007.08.020

Hatfield, J., Fernandes, R., & Job, R. F. S. (2014). Thrill and Adventure Seeking as a modifier of the relationship of perceived risk with risky driving among young drivers. *Accident Analysis & Prevention, 62*, 223-229.

Kline, P. (1999). *The handbook of psychological testing*. New York; London: Routledge.

Lennon, A. & Bates, L. 2015, Examining novice education: What can we learn from a qualitative evaluation of a compulsory program delivered to both mature-aged and young pre-learner licence drivers? In *Proceedings of the Australasian Road Safety Conference 2015*.

Lennon, A., Bates, L., Rowden, P., Haworth, N., Williamson, A., Kiata-Holland, L., & Murray, C. (2014). *Review of the ACT road ready and road ready plus novice driver road safety education course material*. Unpublished manuscript, The Centre for Accident Research and Road Safety. Brisbane, Australia.

Lewis-Evans, B. (2010). Crash involvement during the different phases of the New Zealand Graduated Driver Licensing System (GDLS). *Journal of Safety Research, 41*, 359-365.

Lonero, L. (2008). Trends in Driver Education and Training. *American Journal of Preventive Medicine, 35*(3, Supplement 1), S316-S323.

Masten, S. V., & Foss, R. (2010). Long-term effect of the North Carolina graduated driver licensing system on licensed driver crash incidence: A 5-year survival analysis. *Accident Analysis & Prevention, 42*, 1647-1652.

Matthews, G., Desmond, P., Joyner, L., Carcary, B., & Gilliland, K. (1997). A comprehensive questionnaire measure of driver stress and affect. In T.Rothengatter & E. Vaya (Eds.), Traffic and Transport Psychology. Oxford:Pergamon.

Mayhew, D., Simpson, H. M., & Pak, A. (2003). Changes in collision rates among novice drivers during the first months of driving. *Accident Analysis & Prevention, 35*(5), 683-691.

McCartt, A., Teoh, E. R., Fields, M., Braitman, K. A., & Hellinga, L. A. (2010). Graduated Licensing Laws and Fatal Crashes of Teenage Drivers: A national study. T*raffic Injury Prevention, 11*(3), 240-248.

National Curriculum Services, & Davies Gleave, S. (2001/2). *Evaluation of the ACT Novice Driver Safety Program.* . Canberra, ACT: Department of Urban Services.

Neyens, D. M., Donmez, B., & Boyle, L. N. (2008). The Iowa graduated driver licensing program: Effectiveness in reducing crashes of teenage drivers. *Journal of Safety Research, 39*(4), 383-390.

Newstead, S., & Scully, M. (2013). Crash effects of the new Queensland Graduated Licensing System: A preliminary evaluation. In proceedings of the *Australasian Road Safety Research, Policing & Education Conference,2013*. Brisbane: TMR.

Pressley, J., Benedicto, C., Trieu, L., Kendig, T., & Barlow, B. (2009). Motor vehicle injury, mortality and hospital charges by strength of graduated driver licensing laws in 36 states. *Journal of Trauma, Infection and Critical Care, 67*(1), s43-s53.

Preusser DF, Tison J. (2007). GDL then and now. *J Safety Res* 2007; 38:159–63. doi: 10.1016/j.jsr.2007.02.003

Schafer, J. L., & Graham, J. W. (2002). Missing data: our view of the state of the art. *Psychological methods, 7*(2), 147.

Senserrick, T., & Haworth, N. (2005). Review of literature regarding national and international young driver training, licensing and regulatory sytems: Report to Western Australia Road Safety Council. Melbourne, VIC: Monash University Accident Research Centre.

Shope, J. (2007). Graduated driver licensing: Review of evaluation results since 2002. *Journal of Safety Research, 38*(2), 165-175.

Shope, J., Raghunathan, T., & Patil, S. (2003). Examining trajectories of adolescent risk factors as predictors of subsequent high-risk driving behavior *Journal of Adolescent Health, 32*(3), 214-224.

Watson, B., Fresta, J., Whan, H., McDonald, J., Dray, R., Bauermann, C., & Churchward, R. (1996). *Enhancing driver management in Queensland*. Brisbane: Queensland Transport.

Williams, A., & Shults, R. A. (2010). Graduated Driver Licensing Research, 2007–Present: A Review and Commentary. *Journal of Safety Research, 41*, 77-84.

Williams, A. (2007). Contribution of the components of graduated licensing to crash reductions. *Journal of Safety Research, 38*(2), 177-184.

Appendix A: Parental and participant consent forms

CONSENT FORM – PLEASE COMPLETE AND RETURN

Queensland University of Technology Brisbane Australia	**CONSENT FORM FOR QUT RESEARCH PROJECT** **– Parents --**

Evaluation of the ACT *Road Ready* pre-licence driver education program

QUT Ethics Approval Number 1500000590

RESEARCH TEAM CONTACTS

Dr Alexia Lennon	07 3138 4675	aj.lennon@qut.edu.au
Amanda Evenhuis	07 3138 4906	amanda.evenhuis@qut.edu.au

RETURNING YOUR FORM

To return your form, submit it at the Road Ready centre along with your young person's documents in the envelope provided.
Your envelope should contain: 1) your signed consent form; 2) your young person's signed consent form; 3) your young person's completed questionnaire.

STATEMENT OF PARENT/GUARDIAN CONSENT

This form asks your consent to participate in the study.

By signing below, you are indicating that you:

- Have read and understood the information document regarding this project.
- Have had any questions answered to your satisfaction.
- Understand that if you have any additional questions you can contact the research team.
- Understand that you or your young person are free to withdraw at any time, and you don't have to give a reason. There will be no negative effects.
- Understand that you can contact the Research Ethics Unit on 07 3138 5123 or email ethicscontact@qut.edu.au if you have concerns about the ethical conduct of the project.
- Have discussed the project with your young person and what is required of them if participating.
- Agree that we can contact your young person about participating in the project
- Agree that your young person can choose to participate in the project.
- Agree that we can access your young person's licence and offence records.

Name _____
(please print in block letters)

Signature _____

Date _____

Name of the young person for whom you are providing consent _____
(please print in block letters)

CONSENT FORM – PLEASE COMPLETE AND RETURN

Queensland University of Te Brisbane Australia	CONSENT FORM FOR QUT RESEARCH PROJECT – YOUNG PEOPLE <18 –

Evaluation of the ACT *Road Ready* pre-licence driver education program

QUT Ethics Approval Number: 1500000590

RESEARCH TEAM CONTACTS

Alexia Lennon	07 3138 4675	aj.lennon@qut.edu.au
Amanda Evenhuis	07 3138 4906	amanda.evenhuis@qut.edu.au

RETURNING YOUR FORM

To return your form, submit it along with your completed questionnaire at the Road Ready centre in the envelope provided.
Your envelope should contain: 1) your signed consent form; 2) your parent's signed consent form; 3) your completed questionnaire and contact details.

STATEMENT OF YOUNG PERSON CONSENT

This form asks your consent to participate in the study

By signing below, you are indicating that you:

- Have read and understood the information about this study.
- Have discussed the study with your parent/guardian.
- Have had any questions answered to your satisfaction.
- Understand that if you have any additional questions you can contact the research team.
- Understand that you are free to withdraw at any time, without having to give a reason, even if you have already said yes.
- Understand that you can contact the Research Ethics Unit on 07 3138 5123 or email ethicscontact@qut.edu.au if you have concerns about the ethical conduct of the project.
- Agree that we can access your licence and offence records.
- Agree to participate in the study.

Name of young person _____
(please print in block letters)

Signature of young person _____

Date _____

Name of the parent who has agreed to you participating _____
(please print in block letters)

CONSENT FORM – PLEASE COMPLETE AND RETURN

Queensland University of Te Brisbane Australia	CONSENT FORM FOR QUT RESEARCH PROJECT – YOUNG PEOPLE 18-20 –

Evaluation of the ACT *Road Ready* pre-licence driver education program

QUT Ethics Approval Number: 1500000590

RESEARCH TEAM CONTACTS

Alexia Lennon	07 3138 4675	aj.lennon@qut.edu.au
Amanda Evenhuis	07 3138 4906	amanda.evenhuis@qut.edu.au

RETURNING YOUR FORM

To return your form, submit it along with your completed questionnaire at the Road Ready centre in the envelope provided.
Your envelope should contain: 1) your signed consent form; 2) your completed questionnaire and contact details

STATEMENT OF CONSENT

This form asks your consent to participate in the study.

By signing below, you are indicating that you:

- Have read and understood the information about this study.
- Have had any questions answered to your satisfaction.
- Understand that if you have any additional questions you can contact the research team.
- Understand that you are free to withdraw at any time, without having to give a reason, even if you have already said yes.
- Understand that you can contact the Research Ethics Unit on 07 3138 5123 or email ethicscontact@qut.edu.au if you have concerns about the ethical conduct of the project.
- Agree that we can access your licence and offence records.
- Agree to participate in the study.

Name _____

(please print in block letters)

Signature _____

Date _____

Appendix B: Questionnaires

Time Point 1: Pre-program

Thoughts about driving:

How risky do you think driving is now?	Not very risky	Not risky	Unsure	Risky	Very Risky

Please answer the following based on your usual feelings about driving. You can answer from 1 'not at all' to 10 'very much'.

	Not at all									Very much
I would like to risk my life as a racing driver	1	2	3	4	5	6	7	8	9	10
I sometimes like to frighten myself a little while driving	1	2	3	4	5	6	7	8	9	10
I get a real thrill out of driving fast	1	2	3	4	5	6	7	8	9	10
I enjoy listening to loud exciting music while driving	1	2	3	4	5	6	7	8	9	10
I like to raise my adrenaline levels while driving	1	2	3	4	5	6	7	8	9	10
I would enjoy driving a sports car on a road with no speed limit	1	2	3	4	5	6	7	8	9	10
I enjoy the sensation of accelerating rapidly	1	2	3	4	5	6	7	8	9	10
I enjoy cornering at high speed	1	2	3	4	5	6	7	8	9	10
In general I enjoy driving	1	2	3	4	5	6	7	8	9	10

How skilful do you think you are compared to <u>all other drivers</u> on the following? You can answer from 1 'well below average' to 5 'well above average'.

	Well below average				Well above average
Fluent driving (managing your car in traffic)	1	2	3	4	5
Perceiving hazards in traffic	1	2	3	4	5
Conforming to traffic rules	1	2	3	4	5
Driving fast if necessary	1	2	3	4	5
Paying attention to other road users	1	2	3	4	5
Driving in the dark	1	2	3	4	5
Conforming to the speed limits	1	2	3	4	5

Compared to the average driver of <u>your age and gender</u>, how would you rate the following? You can answer from 1 'well below average' to 5 'well above average'.

	Well below average				Well above average
Your chances of staying healthy during next winter	1	2	3	4	5
Your chances of being fined while driving	1	2	3	4	5
Your chances of being injured in a road crash while driving within the next two years	1	2	3	4	5

Your chances of being injured in a road crash while you are drink driving	1	2	3	4	5
Your chances of being fined for speeding	1	2	3	4	5
Your chances of being injured in a road crash while you are speeding	1	2	3	4	5
Your chances of being fined for drink driving	1	2	3	4	5

The following statements are about what you intend to do while on your provisional (P) licence. How likely are you to do each of the following? You can give answers from 1 'very unlikely' to 7 'very likely'.

	Very unlikely						Very likely
Display P plates	1	2	3	4	5	6	7
Obey the speed limit	1	2	3	4	5	6	7
Limit your driving at night	1	2	3	4	5	6	7
Drive with passengers of your age during the day	1	2	3	4	5	6	7
Drive with passengers of your age at night	1	2	3	4	5	6	7
Wear a seatbelt	1	2	3	4	5	6	7
Allow two seconds between your car and the car in front on highways	1	2	3	4	5	6	7
Not drive more than 10km/h over the speed limit in 60km/h speed zones	1	2	3	4	5	6	7
Not drive more than 10km/h over the speed limit in 100km/h speed zones	1	2	3	4	5	6	7
Not drive after a couple of drinks even if you may not be over the limit	1	2	3	4	5	6	7
Not break the road rules even if you know you won't get caught	1	2	3	4	5	6	7

The next statements are about what other drivers generally do while driving on the road. You can answer these from 'none' to 'all'.

Do other drivers obey the road rules?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers wear seatbelts?	None	Few	Some	Many	All
Do other drivers allow two seconds between their car and the one in front?	None	Few	Some	Many	All
Do other drivers get caught drink driving?	None	Few	Some	Many	All
Do other drivers get caught speeding in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers get caught speeding in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers drive after a couple of drinks even if they may be over the limit?	None	Few	Some	Many	All

Thank you for completing the survey. A researcher will contact you soon.

Time Point 2: Online – 4 weeks post-program

Are you on your learner's (L) or provisional (P) licence?	Learner (L) Provisional (P) I do not have a driver's licence→ (go to thoughts about driving)

If learner (L):

How long have you had your learner's (L) licence?	Weeks / Months
About how many hours of practice driving have you done since the Road Ready program (that is, with a supervisor like a parent or driving instructor)?	<10, 10-25, 26-50, 51-75, 76-100, >100

→ (Go to thoughts about driving)

If provisional (P):

How long after the Road Ready program did you obtain your provisional (P) licence?	Months / Years
About how many hours of practice driving did you do between when you did the Road Ready program and getting your provisional (P) licence? (With a supervisor like a parent or driving instructor)	<10, 10-25, 26-50, 51-75, 76-100, >100

Thoughts about driving:	**(Not very risky 1-5 Very risky)**
How risky do you think driving is now?	1 2 3 4 5
How risky did you think driving was when you first started?	1 2 3 4 5

Usual feelings about driving: How much do you typically feel the following?

	(Not at all 1-10 Very much)
I would like to risky my life as a racing driver	1 2 3 4 5 6 7 8 9 10
I sometimes like to frighten myself a little while driving	1 2 3 4 5 6 7 8 9 10
I get a real thrill out of driving fast	1 2 3 4 5 6 7 8 9 10
I enjoy listening to loud exciting music while driving	1 2 3 4 5 6 7 8 9 10
I like to raise my adrenaline levels while driving	1 2 3 4 5 6 7 8 9 10
I would enjoy driving a sports car on a road with no speed limit	1 2 3 4 5 6 7 8 9 10
I enjoy the sensation of accelerating rapidly	1 2 3 4 5 6 7 8 9 10
I enjoy cornering at high speed	1 2 3 4 5 6 7 8 9 10
In general I enjoy driving	1 2 3 4 5 6 7 8 9 10

How skilful do you think you are compared to all other drivers on the following?

	(Well below average 1-5 Well above average)
Fluent driving (managing your car in traffic)	1 2 3 4 5
Perceiving hazards in traffic	1 2 3 4 5
Conforming to traffic rules	1 2 3 4 5
Driving fast if necessary	1 2 3 4 5
Paying attention to other road users	1 2 3 4 5
Driving in the dark	1 2 3 4 5
Conforming to the speed limits	1 2 3 4 5

Compared to the average driver of your age and gender, how would you rate the following?

	(Well below average 1-5 Well above average)
Your chances of staying healthy during next winter	1 2 3 4 5
Your chances of being fined while driving	1 2 3 4 5
Your chances of being injured in a road crash while driving within the next two years	1 2 3 4 5
Your chances of being injured in a road crash while you are drink driving	1 2 3 4 5
Your chances of being fined for speeding	1 2 3 4 5
Your chances of being injured in a road crash while you are speeding	1 2 3 4 5
Your chances of being fined for drink driving	1 2 3 4 5

The following statements are about what you intend to do while on your provisional (P) licence.

How likely are you to do each of the following?	**(Very unlikely 1-7 Very likely)**
You will display P plates	1 2 3 4 5 6 7
You will obey the speed limit	1 2 3 4 5 6 7
You will limit your driving at night	1 2 3 4 5 6 7
You will drive with passengers of your age during the day	1 2 3 4 5 6 7
You will drive with passengers of your age at night	1 2 3 4 5 6 7
You will wear a seatbelt	1 2 3 4 5 6 7
You will allow two seconds between your car and the car in front on highways	1 2 3 4 5 6 7
You will not drive more than 10km/h over the speed limit in 60km/h speed zones	1 2 3 4 5 6 7
You will not drive more than 10km/h over the speed limit in 100km/h speed zones	1 2 3 4 5 6 7
You will not drive after a couple of drinks even if you may not be over the limit	1 2 3 4 5 6 7

You will not break the road rules even if you know you won't get caught						1 2 3 4 5 6 7	

The next statements are about what other drivers generally do while driving on the road. You can answer these from 'none' to 'all'.

Do other drivers obey the road rules?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers wear seatbelts?	None	Few	Some	Many	All
Do other drivers allow two seconds between their car and the one in front?	None	Few	Some	Many	All
Do other drivers get caught drink driving?	None	Few	Some	Many	All
Do other drivers get caught speeding in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers get caught speeding in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers drive after a couple of drinks even if they may be over the limit?	None	Few	Some	Many	All

Create code:

First 2 letters of mother's maiden name ____

First 2 letters of your own name ____

Date and Month of your birthday ____

E.g., a participant called Mark, born on 17 March whose mother's maiden name is Ryan would enter RYMA1703.

-End-

Time Point 3: Telephone – 6 months post-program

Are you on your learner's (L) or provisional (P) licence?	Learner (L) Provisional (P) I do not have a driver's licence→ (go to thoughts about driving)

If learner (L):

How long have you had your learner's (L) licence?	Weeks / Months
About how many hours of practice driving have you done since the Road Ready program (that is, with a supervisor like a parent or driving instructor)?	<10, 10-25, 26-50, 51-75, 76-100, >100

→ (Go to thoughts about driving)

If provisional (P):

How long after the Road Ready program did you obtain your provisional (P) licence?	Months / Years
About how many hours of practice driving did you do between when you did the Road Ready program and getting your provisional (P) licence? (With a supervisor like a parent or driving instructor)	<10, 10-25, 26-50, 51-75, 76-100, >100

For this survey we ask you to respond to the questions using a numbered rating scale. This scale changes depending on what kind of questions we're asking so I'll let you know what the numbers mean for each set of questions.

For the first question I'm interested in how risky you think driving is - on a scale of 1 to 5, where 1 is not very risky and 5 is very risky.

	(Not very risky 1-5 Very risky)
How risky do you think driving is now?	1 2 3 4 5
How risky did you think driving was when you first started?	1 2 3 4 5

Usual feelings about driving: How much do you typically feel the following?

	(Not at all 1-10 Very much)
I would like to risky my life as a racing driver	1 2 3 4 5 6 7 8 9 10
I sometimes like to frighten myself a little while driving	1 2 3 4 5 6 7 8 9 10
I get a real thrill out of driving fast	1 2 3 4 5 6 7 8 9 10
I enjoy listening to loud exciting music while driving	1 2 3 4 5 6 7 8 9 10
I like to raise my adrenaline levels while driving	1 2 3 4 5 6 7 8 9 10
I would enjoy driving a sports car on a road with no speed limit	1 2 3 4 5 6 7 8 9 10
I enjoy the sensation of accelerating rapidly	1 2 3 4 5 6 7 8 9 10

I enjoy cornering at high speed	1	2	3	4	5	6	7	8	9	10
In general I enjoy driving	1	2	3	4	5	6	7	8	9	10

How skilful do you think you are compared to all other drivers on the following?

	(Well below average 1-5 Well above average)				
Fluent driving (managing your car in traffic)	1	2	3	4	5
Perceiving hazards in traffic	1	2	3	4	5
Conforming to traffic rules	1	2	3	4	5
Driving fast if necessary	1	2	3	4	5
Paying attention to other road users	1	2	3	4	5
Driving in the dark	1	2	3	4	5
Conforming to the speed limits	1	2	3	4	5

Compared to the average driver of your age and gender, how would you rate the following?

	(Well below average 1-5 Well above average)				
Your chances of staying healthy during next winter	1	2	3	4	5
Your chances of being fined while driving	1	2	3	4	5
Your chances of being injured in a road crash while driving within the next two years	1	2	3	4	5
Your chances of being injured in a road crash while you are drink driving	1	2	3	4	5
Your chances of being fined for speeding	1	2	3	4	5
Your chances of being injured in a road crash while you are speeding	1	2	3	4	5
Your chances of being fined for drink driving	1	2	3	4	5

The next statements are about what other drivers generally do while driving on the road. You can answer these from 'none' to 'all'.

Do other drivers obey the road rules?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers wear seatbelts?	None	Few	Some	Many	All
Do other drivers allow two seconds between their car and the one in front?	None	Few	Some	Many	All
Do other drivers get caught drink driving?	None	Few	Some	Many	All

Do other drivers get caught speeding in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers get caught speeding in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers drive after a couple of drinks even if they may be over the limit?	None	Few	Some	Many	All

→If L's or no licence, skip to code confirmation

P licence holders only:
I'd like to ask you some questions about things that might have happened since you got your P plates. Remember that your answers are confidential and I won't be telling anyone what you say.

Have you ever crashed while on your provisional (P) licence? (Had an incident where you were driving that resulted in damage to the vehicle or injury to any person regardless of whether or not it was your fault). If yes…. Yes / No

How many times? _____

How many involved another vehicle or road user? _____

Have you ever nearly crashed while on your provisional (P) licence? (Have to take evasive action or brake very hard to avoid a collision/crash). If yes… Yes / No

How many times? _____

If you remember when you completed the survey online we asked you to create a code that we could use to identify you. So that I can confirm that code can you tell me:

The first 2 letters of your mother's maiden name _____

The first 2 letters of your own name _____

The Date and Month of your birthday _____

E.g. a participant called Mark, born on 17 March whose mother's maiden name is Ryan would enter RYMA1703. _____

-End-

Participant to be contacted via email in 3 months to complete online survey (time 4)

Time Point 4: Online – 9-12 months post-program

Please enter your unique code:

First 2 letters of mother's maiden name _____

First 2 letters of your own name _____

Date and Month of your birthday _____

E.g. a participant called **Mark**, born on **17 March** whose mother's maiden name is **Ryan** would enter **RYMA1703**.

Thoughts about driving:	**(Not very risky 1-5 Very risky)**
How risky do you think driving is now?	1 2 3 4 5
How risky did you think driving was when you first started?	1 2 3 4 5

Usual feelings about driving: How much do you typically feel the following?

	(Not at all 1-10 Very much)
I would like to risky my life as a racing driver	1 2 3 4 5 6 7 8 9 10
I sometimes like to frighten myself a little while driving	1 2 3 4 5 6 7 8 9 10
I get a real thrill out of driving fast	1 2 3 4 5 6 7 8 9 10
I enjoy listening to loud exciting music while driving	1 2 3 4 5 6 7 8 9 10
I like to raise my adrenaline levels while driving	1 2 3 4 5 6 7 8 9 10
I would enjoy driving a sports car on a road with no speed limit	1 2 3 4 5 6 7 8 9 10
I enjoy the sensation of accelerating rapidly	1 2 3 4 5 6 7 8 9 10
I enjoy cornering at high speed	1 2 3 4 5 6 7 8 9 10
In general I enjoy driving	1 2 3 4 5 6 7 8 9 10

How skilful do you think you are compared to all other drivers on the following?

	(Well below average 1-5 Well above average)
Fluent driving (managing your car in traffic)	1 2 3 4 5
Perceiving hazards in traffic	1 2 3 4 5
Conforming to traffic rules	1 2 3 4 5
Driving fast if necessary	1 2 3 4 5
Paying attention to other road users	1 2 3 4 5
Driving in the dark	1 2 3 4 5

Conforming to the speed limits	1 2 3 4 5

Compared to the average driver of your age and gender, how would you rate the following?

	(Well below average 1-5 Well above average)
Your chances of staying healthy during next winter	1 2 3 4 5
Your chances of being fined while driving	1 2 3 4 5
Your chances of being injured in a road crash while driving within the next two years	1 2 3 4 5
Your chances of being injured in a road crash while you are drink driving	1 2 3 4 5
Your chances of being fined for speeding	1 2 3 4 5
Your chances of being injured in a road crash while you are speeding	1 2 3 4 5
Your chances of being fined for drink driving	1 2 3 4 5

How likely are you to do each of the following?	**(Very unlikely 1-7 Very likely)**
You will display P plates	1 2 3 4 5 6 7
You will obey the speed limit	1 2 3 4 5 6 7
You will limit your driving at night	1 2 3 4 5 6 7
You will drive with passengers of your age during the day	1 2 3 4 5 6 7
You will drive with passengers of your age at night	1 2 3 4 5 6 7
You will wear a seatbelt	1 2 3 4 5 6 7
You will allow two seconds between your car and the car in front on highways	1 2 3 4 5 6 7
You will not drive more than 10km/h over the speed limit in 60km/h speed zones	1 2 3 4 5 6 7
You will not drive more than 10km/h over the speed limit in 100km/h speed zones	1 2 3 4 5 6 7
You will not drive after a couple of drinks even if you may not be over the limit	1 2 3 4 5 6 7
You will not break the road rules even if you know you won't get caught	1 2 3 4 5 6 7

The next statements are about what other drivers generally do while driving on the road. You can answer these from 'none' to 'all'.

Do other drivers obey the road rules?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers stick to the speed limit in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers wear seatbelts?	None	Few	Some	Many	All

Do other drivers allow two seconds between their car and the one in front?	None	Few	Some	Many	All
Do other drivers get caught drink driving?	None	Few	Some	Many	All
Do other drivers get caught speeding in a 60km/h zone?	None	Few	Some	Many	All
Do other drivers get caught speeding in a 100km/h zone?	None	Few	Some	Many	All
Do other drivers drive after a couple of drinks even if they may be over the limit?	None	Few	Some	Many	All

Thinking back to when you were learning to drive, did you ever practice driving on a road without a supervisor while you were on your learners (L) licence? Yes / No

Have you ever crashed while on your provisional (P) licence? (Had an incident where you were driving that resulted in damage to the vehicle or injury to any person regardless of whether or not it was your fault). If yes…. Yes / No

How many times? _____

How many involved another vehicle or road user? _____

Have you ever nearly crashed while on your provisional (P) licence? (Have to take evasive action or brake very hard to avoid a collision/crash). If yes… Yes / No

How many times?

_____

-**End-**